

# DATA BRIEF

## Federal Obligations for Applied Research Keep Pace with Those for Basic Research

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*Basic research and applied research each comprises 21 percent of the projected FY 1998 Federal R&D total, compared with their 18-percent shares in FY 1992.*

Federal obligations for research and development (R&D) and R&D plant will decrease an estimated 1 percent (2-percent decrease in inflation-adjusted 1992 dollars) from the previous year's level to \$72 billion for fiscal year (FY) 1998, according to a survey of Federal agencies conducted in 1997 (table 1). However, agencies project a 2.5-percent increase in the research portion of the R&D total (a 1-percent increase in constant 1992 dollars). Research would account for 42 percent of the FY 1998 R&D money, with basic and applied research support totaling more than \$15 billion each, according to preliminary estimates. In constant 1992 dollars, basic research will remain nearly flat, and applied research will increase about 1 percent from FYs 1997-98. As in the past, the Federal Government obligates the largest portion of R&D and R&D plant dollars for development, which accounts for approximately 55 percent of the FY 1998 pre-

liminary total. However, the development share of the total has decreased throughout the 1990's, from 64 percent in FY 1990. Agencies project development funds to drop 2 percent (down 4 percent in constant 1992 dollars) from their FY 1997 level, to \$40 billion in FY 1998. R&D plant is slated to decrease 13 percent (down 15 percent in constant 1992 dollars) to under \$2 billion. The statistics are being released in advance of the National Science Foundation's (NSF's) Detailed Statistical Tables Report, *Federal Funds for Research and Development: Fiscal Years 1996, 1997, and 1998*, Volume 46.

### Agencies' Funding for Basic and Applied Research

The share of Federal obligations for basic research has been increasing slowly since FY 1992. In FY 1992, basic research comprised 18 percent of total R&D. That percentage increased slightly each year and reaches 21 percent in FY 1998, according to preliminary estimates. Change in the applied research share has been similar to that for basic research throughout this period. In FY 1992, applied research accounted for 17.5 percent of the R&D total, and its FY 1998 share is also 21 percent. Overall, Federal agencies report a 4-percent average annual rate of growth (1 percent in constant 1992 dollars) for basic research from FYs 1990-98. Federal agencies report about a 5-percent average annual rate of growth (2 percent in constant 1992 dollars) for applied research during this same time period. When adjusted for inflation, however, basic and applied research funding each has held steady at about \$13 billion since FY 1993.

The six lead agencies in basic research funding will account for 97 percent of the Federal basic research total in FY 1998 (chart 1). These agencies are the Department of Health and Human Services (HHS) (almost entirely at the National Institutes of Health),

**Table 1. Federal obligations for research and development and R&D plant, by character of work: FYs 1990-98**

Fiscal year	Total R&D and R&D plant	Basic Research	Applied Research	Development	R&D plant
(Millions of current dollars)					
1990.....	65,831	11,286	10,337	41,937	2,272
1991.....	64,148	12,171	11,798	37,327	2,853
1992.....	68,577	12,490	12,001	41,102	2,985
1993.....	70,415	13,399	13,491	40,424	3,101
1994.....	69,428	13,545	13,888	39,824	2,171
1995.....	70,997	13,893	14,677	40,166	2,261
1996.....	69,409	14,462	13,803	39,398	1,746
1997 preliminary...	71,996	14,959	14,526	40,488	2,023
1998 preliminary...	71,593	15,205	15,014	39,620	1,754
(Millions of constant 1992 dollars) <sup>1</sup>					
1990.....	70,672	12,116	11,097	45,021	2,439
1991.....	66,030	12,528	12,144	38,422	2,936
1992.....	68,577	12,490	12,001	41,102	2,985
1993.....	68,604	13,054	13,144	39,384	3,021
1994.....	66,047	12,885	13,211	37,884	2,065
1995.....	65,848	12,885	13,613	37,253	2,097
1996.....	62,922	13,111	12,513	35,715	1,583
1997 preliminary...	63,860	13,268	12,885	35,912	1,795
1998 preliminary...	62,320	13,235	13,069	34,488	1,527

<sup>1</sup>Fiscal year deflators are from the Office of Management and Budget, FY 1999 Budget of the United States Government, Historical Tables, Table 10.1, pp. 169-170

**SOURCE:** NSF/SRS, Survey of Federal Funds for Research and Development Fiscal Years 1996, 1997, and 1998.

### Electronic Dissemination

SRS data are available through the World Wide Web (<http://www.nsf.gov/sbe/srs/stats.htm>). For more information about obtaining reports, contact [pubs@nsf.gov](mailto:pubs@nsf.gov) or call (301) 947-2722. For NSF's Telephonic Device for the Deaf, dial (703) 306-0090.

NSF, Department of Energy (DOE), National Aeronautics and Space Administration (NASA), Department of Defense (DOD), and Department of Agriculture (USDA). Of these six agencies, NASA and USDA report an expected decrease in basic research funding for FY 1998, dropping 5 percent (down \$102 million) and 1 percent (down \$7 million), respectively. Each of the other four agencies expects strong to modest increases in basic research funding: DOD (9 percent), DOE (5 percent), NSF (4 percent), and HHS (1 percent). Seven agencies will account for 88 percent of the Federal applied research obligations in FY 1998. These agencies are HHS, DOE, NASA, DOD, USDA, DOC, and the Department of the Interior (DOI). DOD and USDA each reports an expected 3-percent decrease in applied research funding for FY 1998 (down \$77 million and \$24 million, respectively). DOC indicates that its applied research funding is nearly the same as its FY 1997 level. The other four agencies expect strong to

modest increases in applied research funding: NASA (11 percent), DOE (6 percent), HHS (5 percent), and DOI (2 percent).

### Research Funding by Science and Engineering Fields

Most basic research obligations support work performed in the life sciences (\$7 billion), physical sciences (\$3 billion), engineering (\$2 billion), and environmental sciences (\$1.5 billion), according to preliminary 1998 estimates. HHS provides the bulk (82 percent) of life sciences funding, while DOE is the largest Federal funder of basic research in the physical and environmental sciences, accounting for 33 percent of their combined total. NASA follows closely, funding 32 percent of basic research in these sciences.

Agencies also provide more applied research support in the life sciences (\$6 billion, mostly from HHS) than in any other field. However, agencies fund applied re-

search in engineering second most (at \$4 billion), largely provided by DOD (35 percent) and NASA (34 percent).

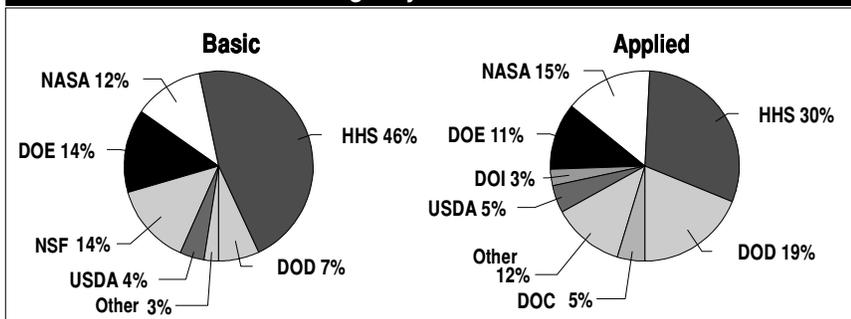
### Survey Notes

The 31 Federal agencies that report R&D obligations to the Federal Funds survey submitted actual obligations for FY 1996 and preliminary data for FYs 1997-98. Data were collected from May through September of 1997. Agencies can later revise the preliminary data on the basis of actual changes in the funding levels of R&D programs. Therefore, FYs 1997-98 obligations are subject to revision in the next survey cycle. Further, agencies may change prior-year data to reflect program reclassifications. In recent years, agency-reported revisions have been extensive, reflecting the uncertainty and flux in the funding of the Nation's R&D enterprise. For example, during the period May through August 1996, Federal agencies projected total R&D and R&D plant obligations of \$71 billion for FY 1996. As detailed in table 1 of this Data Brief, agencies now report actual FY 1996 obligations of \$69 billion, more than a 2-percent downward revision from earlier expectations.

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**Chart 1. Distribution of Preliminary Federal Obligations for Research by Agency: FY 1998**



SOURCE: NSF/SRS, Federal Funds for Research and Development: Fiscal Years, 1996, 1997, and 1998.

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